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FORM**

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Total Number of Pages in This Submission

18

Application Number

10/044,407

Filing Date

January 11, 2002

First Named Inventor

Dennis M. Hilton

Art Unit

1714

Examiner Name

Toomer, Cephia D.

Attorney Docket Number

621P001

ENCLOSURES (Check all that apply)

Fee Transmittal Form



Fee Attached



Amendment/Reply



After Final



Affidavits/declaration(s)



Extension of Time Request



Express Abandonment Request



Information Disclosure Statement



Certified Copy of Priority Document(s)

Reply to Missing Parts/
Incomplete ApplicationReply to Missing Parts
under 37 CFR 1.52 or 1.53

Drawing(s)



Licensing-related Papers



Petition

Petition to Convert to a
Provisional Application

Power of Attorney, Revocation



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Remarks



After Allowance Communication to TC

Appeal Communication to Board
of Appeals and InterferencesAppeal Communication to TC
(Appeal Notice, Brief, Reply Brief)

Proprietary Information



Status Letter

Other Enclosure(s) (please identify
below):

-Letter of Transmittal (1-Page)

-Brief on Appeal (14-Pages)

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name

Niels & Lemack

Signature

Printed name

Kevin S. Lemack

Date

January 17, 2006

Reg. No.

32,579

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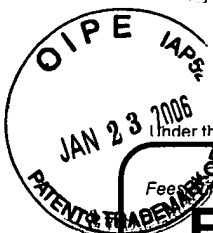
Kevin S. Lemack

Date

January 17, 2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL

For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 500.00

Complete if Known

Application Number	10/044,407
Filing Date	January 11, 2002
First Named Inventor	Dennis M. Hilton
Examiner Name	Toomer, Cephia D.
Art Unit	1714
Attorney Docket No.	621P001

METHOD OF PAYMENT (check all that apply)

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	<u>Small Entity</u> Fee (\$)	Fee (\$)	<u>Small Entity</u> Fee (\$)	Fee (\$)	<u>Small Entity</u> Fee (\$)	
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	<u>Small Entity</u> Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

<u>Total Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>	<u>Multiple Dependent Claims</u>
_____ - 20 or HP = _____	x _____	= _____		<u>Fee (\$)</u> <u>Fee Paid (\$)</u>

HP = highest number of total claims paid for, if greater than 20.

<u>Indep. Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
_____ - 3 or HP = _____	x _____	= _____	

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

<u>Total Sheets</u>	<u>Extra Sheets</u>	<u>Number of each additional 50 or fraction thereof</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
_____ - 100 = _____	/ 50 = _____	(round up to a whole number) x _____	= _____	

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Brief on Appeal Filing Fee

Fees Paid (\$)

\$500.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 32,579	Telephone 508-898-1818
Name (Print/Type)	Kevin S. Lemack		Date January 17, 2006

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellants : Dennis M. Hilton et al.
Serial No. : 10/044,407
Filed : January 11, 2002
For : FOAMED FIREPROOFING COMPOSITION AND METHOD
Examiner : Toomer, Cephia D.
Art Unit : 1714
Attorney
Docket No. : 621P001
Confirmation
No. : 8920
Customer No. : 42754

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir: LETTER OF TRANSMITTAL

There is filed herewith Appellant's Brief on Appeal in the above-identified case.

The due date of Appellant's Brief is two months from the date of receipt (November 18, 2005) by the PTO of Appellant's Notice of Appeal: namely, **January 18, 2006**.

A check in the amount of \$500.00 in payment of the Brief on Appeal fee is enclosed herewith.


The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 14-0930.

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Signature: Kevin S. Lemack

Date: January 17, 2006

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
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Customer No. : 42754
Appeal No. :

-BRIEF ON APPEAL-

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES



Applicant : Dennis M. Hilton, et al.
Serial No. : 10/044,407
Filed : January 11, 2002
For : FOAMED FIREPROOFING COMPOSITION AND METHOD
Examiner : Toomer, Cephia D.
Art Unit : 1714
Confirmation No. : 8920
Customer No. : 42754
Attorney Docket No. : 621P001

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Sir:

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Kevin S. Lemack
Name of applicant, assignee, or Registered Representative

[Signature]
Signature
January 17, 2006
Date

APPEAL BRIEF

The Appellants hereby submit this brief in support of the Appellants' appeal from the decision of the Examiner dated August 24, 2005 rejecting claims 1, 5-8, 10 and 11.

A check in the amount of \$500.00 for the fee for filing a brief in support of an appeal pursuant to 37 C.F.R. §1.17(f) is enclosed.

I. REAL PARTY IN INTEREST

The real party in interest is W.R. Grace & Co.-Conn., the assignee of record.

II. RELATED APPEALS AND INTERFERENCES

To the best of the Appellants' knowledge, the following applications are under appeal and no other appeals or interferences are pending and are related to this appeal: Serial Nos. 10/674,745; 10/306,594 and 10/657,494. There are no related interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

III. STATUS OF CLAIMS

Claims 1, 5-8, 10 and 11 are pending in the subject application.

Claims 1, 5-8, 10 and 11 stand rejected.

IV. STATUS OF AMENDMENTS

No amendments to the claims were filed subsequent to the final rejection dated August 9, 2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 relates to a method of producing a hydraulic binder foam. The method includes forming a slurry comprising gypsum (page 5, line 5 from the bottom), polyvinyl alcohol as a stabilizing agent (page 6, lines 7-10), and water (page 6, lines 11-14); conveying the slurry to a length of hose, introducing an amount of gas into the slurry in the hose at a

flow rate and pressure sufficient to cause the slurry to foam, and conveying the foam through the hose (paragraph bridging pages 7 and 8).

Independent claim 10 relates to a method of forming a stabilized foam effective for spray application, the method including mixing a formulation comprising calcium sulfate hemihydrate (page 5, lines 5 from the bottom), polyvinyl alcohol (page 6, line 10), a set retarder (paragraph bridging pages 10 and 11), and a sufficient amount of water to react with the calcium sulfate hemihydrate to form calcium sulfate dihydrate and cause the mix to form a pumpable slurry (page 13, last two lines), conveying the slurry to a length of hose page 13, last line, to page 14, line 2), introducing air into the slurry in the hose to create turbulence and mechanically form a foam (page 14, last 6 lines) cause the slurry to foam, conveying the foam through the hose (paragraph bridging pages 7 and 8), and introducing aluminum sulfate into the foam to accelerate the formation of calcium sulfate dihydrate (page 12, first full paragraph).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1, 5 and 6 are unpatentable under 35 U.S.C. §103(a) over Chao, U.S. Patent No. 5,109,030 in view of SU 1743887.

Whether claims 7, 8, 10 and 11 are unpatentable under 35 U.S.C. §103(a) over Chao, U.S. Patent No. 5,109,030 in view of SU 1743887, further in view of Nebesnak, U.S. Patent No. 6,475,275.

VII. ARGUMENT

1. Claims 1, 5 and 6 are not obvious over Chao in view of SU '887

To establish a *prima facie* case of obviousness, the prior art must teach or suggest all the limitations of a claim, there must exist a suggestion or motivation in the references themselves or as a matter of general knowledge to modify the references, and there must be a reasonable expectation of success. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). However, the Examiner may not establish obviousness using hindsight or in view of the teachings or suggestions of the Appellants. *Para-Ordnance Manufacturing, Inc. v. SGS Importers International, Inc.*, 73 F.3d 1085, 37 U.S.P.Q.2d 1237 (Fed. Cir. 1995). "To draw on hindsight knowledge of the...invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction--an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 38 U.S.P.Q.2d 1551 (Fed. Cir. 1996). All limitations of a claim must be

taught or suggested by the cited references to establish prima facie obviousness. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Claim 1 recites a method of producing a hydraulic binder foam including the steps of forming a slurry comprising a hydraulic binder, a foam stabilizing agent and water, conveying the slurry to a length of hose, and causing the slurry to foam. Thus, the method involves foaming a hydraulic slurry, which though difficult, results in the advantages touted in the instant specification.

The rejection of record states that it would have been obvious to have selected the claimed method of producing the foam because Chao teaches that any method known in the art may be used, and SU teaches that its method produces a high quality foam.

Chao discloses hydraulic compositions useful as substrates for floors, walls and roofs. The compositions include a hydraulic substance such as gypsum, a copolymeric foam stabilizer which are polymers formed from one or more nonionic, ethylenically-unsaturated monomers and one or more ionic or ionizable ethylenically-unsaturated monomers, and optionally foaming agents, polymeric binders, fillers, aggregates, fibers, pigments, thickeners, accelerators, retarders and water reducers. Chao teaches forming a prefoam component, which is

defined as a foamed mixture of water and the copolymeric foam stabilizer of the invention:

"The foamed compositions of this invention are preferably prepared by mixing component one with component two, wherein a) component one is a foamed mixture which contains at least water and the copolymeric foam stabilizer, and b) component two contains at least water and one or more hydraulic substance." (Column 2, lines 42-47, emphasis added).

See also:

"The prefoam component typically contains at least a foamed mixture of water and the copolymeric foam stabilizer of this invention. The prefoam component preferably contains one or more foaming agents as described earlier." (Column 6, line 67 to column 7, line 3; emphasis added).

Chao does state that the foamed composition can also be prepared by chemically or mechanically foaming a mixture containing a prefoam component with a hydraulic slurry (column 7, lines 11-14), but nowhere enables how such a foaming operation would be carried out. Moreover, based upon Chao's own definition of the prefoam component (a foamed mixture of water and foam stabilizer), even this embodiment would require that the prefoam is foamed first, followed by forming a mixture of the prefoam and the hydraulic slurry, and then foaming this mixture. This is contrary to the instant claim language.

Chao also do not disclose or suggest conveying a slurry (prior to it being foamed) to a length of hose, introducing an amount of gas into the slurry in the hose at a flow rate and pressure sufficient to cause the slurry to foam, and conveying

the foam through the hose, as required by instant claims 1, 5 and 6. The Examiner cites SU '887 as disclosing these features.

SU '887 discloses a device for preparing industrial foam in the production of porous mortar. The device is a foam generator having nozzles for supplying a foaming agent and a dispersing agent, a mixing chamber and a screen. The chamber for mixing and forming the foam contains vortex-forming elements. Compressed air and foaming agent enter the mixing chamber through respective nozzles and mix intensively as a result of their interaction with the vortex-forming elements in the chamber. The foamed mixture then passes through a screen and is conveyed to another location where mortar is prepared.

However, SU '887 nowhere discloses or suggests foaming a slurry that includes hydraulic binder as required by the instant claims. SU '887 only teaches mixing compressed air with a foaming agent in a chamber having vortex-forming streams. Moreover, the instant claims further require that the introduction of the gas be at a flow rate and pressure sufficient to not only cause the slurry to foam, but also to convey the resulting foam through the length of hose. This is also nowhere disclosed or suggested by SU '887.

The Examiner's position is that since Chao discloses that any method known in the art may be used to prepare the foam, and that it therefore would have been obvious to use the method

of SU '887 to foam the Chao composition. However, Appellants respectfully submit that one skilled in the art would not combine the teachings of SU '887 and foam the compositions of Chao, since the skilled artisan would know that doing so would result in failure. Specifically, SU '887 requires that the foamed mixture pass through a screen to disperse the mixture. One skilled in the art would not modify the teachings of Chao by using the method of SU '887, since SU '887 requires the use of a screen, and the Chao compositions includes particulate material such as a hydraulic binder. A screen in a solution being foamed creates a large surface area for foaming to take place. In the instant formulation, the presence of solid ingredients such as gypsum, and optionally cellulosic fiber and glass fiber, would clog the screen and inhibit the dispersion. As stated by the Federal Circuit in *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1986), "One cannot use hindsight reconstruction to pick and choose from isolated disclosures in the prior art to deprecate the claimed invention." Of similar import is *In re Wesslau*, 147 U.S.P.Q. 391, 393 (CCPA 1965):

"It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art." (Emphasis added).

See also, *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*,
230 U.S.P.Q. 416 (Fed. Cir. 1986):

"A single line in a prior art reference
should not be taken out of context and
relied upon with the benefit of hindsight
to show obviousness"

One, therefore, cannot ignore the teachings of SU '887 to pass
the foamed mixture (which in SU '887, only includes a "foaming
agent") through a screen for dispersion.

Furthermore, the Hilton Declaration of record
demonstrates that the density achieved by spray applying the
resulting foam produced in accordance with the instant was
unexpectedly much less than that produced by spray applying
the foam produced in accordance with Chao '030. Those skilled
in the art readily appreciate that the density of the
resulting foams is primarily a function of the type and amount
of binder. Accordingly, the results of record demonstrate to
the skilled artisan that it is the method of the present
invention, not the amounts of components, that results in the
surprising and unexpected results.

The Examiner contends that the Declaration shows only
that the *preferred* method of Chao produces less than desirable
results. Appellant respectfully disagrees. As noted above,
Chao defines the prefoam as already being foamed, regardless
of when the hydraulic binder is added.

In addition, it is noted that the Declaration of record objectively demonstrates that the pre-foaming step in the Chao et al. reference would render the process commercially useless, regardless of the particular identity or amounts of binder and stabilizer.


2. Claims 7, 8, 10 and 11 are not obvious over Chao in view of SU '887, and further in view of Nebesnak

The arguments above apply as well to claims 7, 8, 10 and 11. Nebesnak, cited as teaching the equivalence of aluminum sulfate and calcium chloride, does not supply the above deficiencies of Chao and SU '887.

CONCLUSION

For the reasons set forth above, the Appellant requests that the Examiner's rejections of claims 1, 5-8, 10 and 11 be reversed and that all pending claims be allowed.

Respectfully submitted,


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APPENDIX

CLAIMS ON APPEAL

1. A method of producing a hydraulic binder foam, said method comprising: forming a slurry comprising gypsum, polyvinyl alcohol as a stabilizing agent and water; conveying said slurry to a length of hose; introducing an amount of gas into said slurry in said length of hose at a flow rate and pressure sufficient to cause said slurry to foam and to convey said foam through said length of hose.
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. The method of claim 1, wherein said slurry further comprises a set retarder.
6. The method of claim 1, further comprising introducing a set accelerator into said foam.
7. The method of claim 1, further comprising introducing aluminum sulfate into said foam.
8. The method of claim 7, further comprising spray applying said foam to a substrate and allowing it to harden on said substrate.
9. (Cancelled)
10. A method of forming a stabilized foam effective for spray application, comprising: mixing a formulation comprising calcium sulfate hemihydrate, polyvinyl alcohol, a set

retarder; and a sufficient amount of water to react with said calcium sulfate hemihydrate to form calcium sulfate dihydrate and cause said mix to form a pumpable slurry; conveying said slurry to a length of hose; introducing air into said slurry in said length of hose to create turbulence and mechanically form a foam; conveying said foam through said hose; and introducing aluminum sulfate into said foam to accelerate the formation of calcium sulfate dihydrate.

11. The method of claim 10, further comprising spray applying said foam onto a substrate.

12. (Cancelled)